

**REMARKS**

Reconsideration and allowance are respectfully requested. Claims 1, 3-6, 11-12, 14-15, 17-20 and 23 are pending. Claims 16, 21, 22 and 24 are cancelled without any disclaimer of the subject matter contained therein.

**Claim Objections**

Claim 16 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 3. Applicants have cancelled claim 16, thereby rendering the objection to claim 16 moot.

Claims 21, 22, and 24 are objected to for failing to set forth the structure with which the apparatus/device is comprised. Applicants have cancelled claims 21, 22 and 24, thereby rendering the objection to claims 21, 22 and 24 moot.

**Rejections under 35 U.S.C. § 102**

1. Claims 1, 3-6, 12, 14-19, 21, 22, and 24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,104,775 ("Tuy") which incorporates by reference U.S. Patent No. 6,097,784 ("Tuy '784"). Applicants traverse this rejection for the following reasons.

Claim 1 recites, *inter alia*, "rays are weighted as a function of corresponding position in the beam." At least this feature is not disclosed or suggested by Tuy.

Tuy discloses a 3D image reconstruction for helical partial cone beam scanners having a multiplicity function  $M_\lambda$ . "The multiplicity function  $M_\lambda$  is introduced to account for redundancy in the collected data." Col. 8, lines 12-13 of Tuy.

The Examiner relies on Col. 8, lines 12-13 of Tuy to teach the weighting of claim

1. However, the weighting of Tuy is not in any way related to the position of the rays

in the beam. Rather, Tuy only defines a weighting that occurs based on the redundancy of rays.

Therefore, Tuy fails to disclose or suggest the "rays are weighted as a function of corresponding position in the beam," of claim 1. In other words, Tuy fails to provide that the weighting is dependent on the position of the rays in the beam.

Claims 3-6, 12, and 17-19 are patentable at least by virtue of their dependency on claim 1.

Claim 14 is a separate independent claim from claim 1, wherein each independent claim contains its own individual limitations. Each independent claim should be interpreted solely based upon limitations set forth therein. However, claim 14 is patentable for at least reasons somewhat similar to those set forth above regarding claim 1. Claim 15 is patentable at least by virtue of its dependency on claim 14.

Withdrawal of this rejection is requested.

**2.** Claims 1, 3-6, 11, 14-16, 18, 19, 21, 22, and 24 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 7,245,755 ("Pan"). Applicants traverse this rejection for the following reasons.

Although Applicants do not admit that Pan is relevant to any of claims 1, 3-6, 11, 14-16, 18, 19, 21, 22, and 24, Applicants attach Rule 1.131 Affidavits and Exhibits A – F from each of the inventors to antedate Pan, thereby removing Pan as prior art under any sub-section of 35 U.S.C. § 102.

For at least the foregoing reasons, Applicants request the Examiner reconsider and withdraw the current rejection of claims 1, 3-6, 11, 14-16, 18, 19, 21, 22, and 24 under 35 U.S.C. § 102(e) in view of Pan.

**Rejections under 35 U.S.C. § 103**

**1.** Claims 20 and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tuy as applied to claim 1 above, and further in view of U.S. Patent No. 6,529,575 ("Hsieh"). This rejection is respectfully traversed in that even assuming arguendo that Hsieh could be combined with Tuy, which Applicants do not admit, the combination fails to render even claim 1 obvious because Hsieh suffers from at least the same deficiencies as Tuy. Therefore, claims 20 and 23 are patentable over Tuy in view of Hsieh.

Withdrawal of this rejection is requested.

**2.** Claims 6 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Pan as applied to claim 5 in view of "Performance of Approximate Cone-Beam Reconstruction in Multi-Slice Computed Tomography" by Bruder et al. ("Bruder"). Applicants traverse this rejection for the following reasons.

As stated above, Applicants attach Rule 1.131 Affidavits and Exhibits A – F from each of the inventors to antedate Pan. Moreover, Bruder fails to disclose or suggest the features of claim 1 that the Examiner asserts are taught by Pan. Therefore, claims 6 and 17 are patentable over Bruder.

Withdrawal of this rejection is requested.

**3.** Claim 12 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Pan as applied to claim in view of "Performance Evaluation of Exact and Approximate Cone-beam Algorithms in Spiral Computed Tomography" by Sourbelle ("Sourbelle"). Applicants traverse this rejection for the following reasons.

As stated above, Applicants attach Rule 1.131 Affidavits and Exhibits A – F from each of the inventors to antedate Pan. Moreover, Sourbelle fails to disclose or

suggest the features of claim 1 that the Examiner asserts are taught by Pan. Therefore, claim 12 is patentable over Sourbelle.

Withdrawal of this rejection is requested.

**4.** Claims 20 and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Pan as applied to claim 1 above, and further in view of Hsieh. Applicants traverse this rejection for the following reasons.

As stated above, Applicants attach Rule 1.131 Affidavits and Exhibits A – F from each of the inventors to antedate Pan. Moreover, Hsieh fails to disclose or suggest the features of claim 1 that the Examiner asserts are taught by Pan. Therefore, claims 20 and 23 are patentable over Hsieh.

Withdrawal of this rejection is requested.

**5.** Claims 1, 3-5, 14-16, 18, 19, 21, 22, and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,285,733 ("Proksa") in view of "3D Cone-beam CT Reconstruction for Circular Trajectories" by Grass et al. ("Grass"). Applicants traverse this rejection for the following reasons.

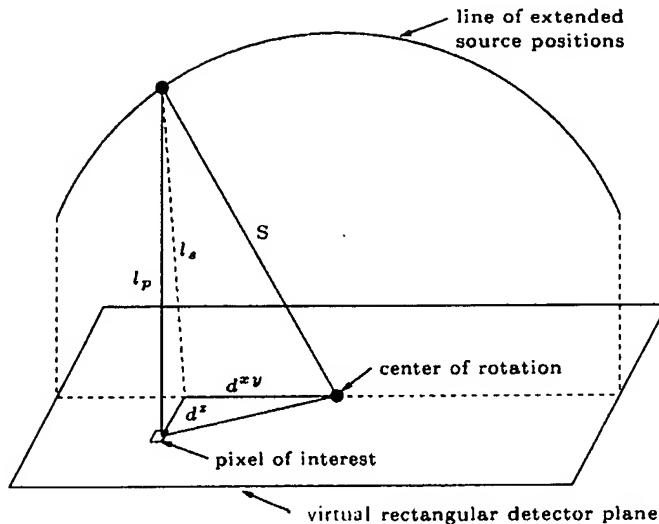
Claim 1 recites, *inter alia*, a "weighting function having a value ... tending to zero for rays to detector rows at an edge of the detector rows." (emphasis added). At least this feature is not disclosed or suggested by Proksa and Grass, alone or in combination (assuming they could be properly combined, which Applicants do not admit).

On pages 21-22 of the Office Action dated February 19, 2010, the Examiner admits that Proksa fails to disclose the "weighting function" of claim 1. Instead, the Examiner relies on Grass.

Grass discloses a two-dimension cosine type weighting function as follows:

$$\cos(\theta(d_{xy}, d_z)) = (l_s/l_p)$$

Figure 3, which illustrates  $l_s$  and  $l_p$  is provided below for the Examiner's convenience.



Therefore, as shown above  $l_s$  never equals zero. Therefore, the weighting function never weights a ray to zero.

Consequently, Grass fails to provide the weighting "zero for rays to detector rows at an edge of the detector rows," as set forth in claim 1. By contrast, the weight is always greater than zero.

Therefore, Proksa and Grass fail to render claim 1 obvious.

Claims 3-5, 18, and 19 are patentable at least by virtue of their dependency on claim 1.

Claim 14 is a separate independent claim from claim 1, wherein each independent claim contains its own individual limitations. Each independent claim should be interpreted solely based upon limitations set forth therein. However, claim 14 is patentable for at least reasons somewhat similar to those set forth above regarding claim 1. Claim 15 is patentable at least by virtue of its dependency on claim 14.

Withdrawal of this rejection is requested.

**6.** Claims 6 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Proksa in view of Grass as applied to claim 5 above, and further in view of Bruder. This rejection is respectfully traversed in that even assuming arguendo that Proksa and Grass could be combined with Bruder, which Applicants do not admit, the combination fails to render even claim 1 obvious because Bruder suffers from at least the same deficiencies as Proksa and Grass. Therefore, claims 6 and 17 are patentable over Proksa in view of Grass and Bruder.

Withdrawal of this rejection is requested.

**7.** Claims 20 and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Proksa in view of Grass as applied to claim 1 above, and further in view of Hsieh. This rejection is respectfully traversed in that even assuming arguendo that Proksa and Grass could be combined with Hsieh, which Applicants do not admit, the combination fails to render even claim 1 obvious because Hsieh suffers from at least the same deficiencies as Proksa and Grass. Therefore, claims 20 and 23 are patentable over Proksa in view of Grass and Hsieh.

Withdrawal of this rejection is requested.

**8.** Claims 1, 3-5, 12, 14-16, 18, 19, 21, 22, and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2004/0076265 ("Heuscher") in view of Sourbelle. Claims 6 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Heuscher as applied to claim 5 above, and further in view of Bruder. Applicants traverse this rejection for the following reasons. Claims 20 and 23 stand rejected under 35 U.S.C. § 103(a) as being

unpatentable over Heuscher and Sourbelle as applied to claim 1 above, and further in view of Hsieh. Applicants traverse these rejections for the following reasons.

Heuscher's critical reference date under 35 U.S.C. § 102(e) is October 21, 2002. The present application claims priority to DE 10244181.2, which has a filing date earlier than Heuscher's reference date, September 23, 2002. Accordingly, Applicants have submitted a certified English translation of DE 10244181.2 to perfect Applicants' claim to priority.

Since the priority date of the present application precedes Heuscher's critical reference date and Applicants have perfected the claim to priority, Heuscher is disqualified as prior art.

Sourbelle, Bruder and Hsieh fails to disclose or suggest the features of claims 1 and 14 that the Examiner asserts are taught by Heuscher. Therefore, claims 1, 3-6, 12, 14-15, and 17-24 are patentable.

Withdrawal of these rejections is requested.

**Double Patenting Rejections**

Claims 1, 4-6, 12, 19, 21, 22 and 24 stand rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,839,400 in view of Tuy. Claims 1, 4-6, 11, 12, and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,839,400 in view of Proksa and Grass.

Applicants have filed a terminal disclaimer with regards to U.S. Patent No. 6,839,400, thereby rendering these rejections moot.

**CONCLUSION**

Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of claims 1, 3-6, 11-12, 14-15, 17-20 and 23 in connection with the present application is earnestly solicited.

Pursuant to 37 CFR §§ 1.17 and 1.136(a), Applicants petition for a three (3) month extension of time for filing a reply to the February 19, 2010 Office Action, and submit the required \$1110.00 extension fee herewith.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Donald J. Daley at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. §1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY, & PIERCE, P.L.C.

By

  
Donald J. Daley, Reg. No. 34,313  
Blair M. Hoyt, Reg. No. 56,205

P.O. Box 8910  
Reston, Virginia 20195  
(703) 668-8000

DJD/BMH/mas

Attachments: Rule 1.131 Affidavits  
Certified English Translation of DE 10244181.2 (with Verified Translation Statement)